

OROVILLE FACILITIES RELICENSING FERC PROJECT NO. 2100

SP-T4 Task 8 Wildlife Biodiversity Analyses DRAFT FINAL REPORT

Introduction

- # Task 8 of the Study Plan identifies the need to quantify the wildlife species richness associated with all cover classes and size classes of all habitat types within the project area.
- # Further, Task 8 identifies the California Wildlife Habitat Relationship System as the appropriate tool for these analyses.

Biodiversity MOU

- # In 1991, a Memorandum of Understanding was signed by State, federal, and local agencies related to biodiversity.
- # The purpose of this MOU was to design a statewide strategy to conserve biological diversity and coordinate implementation of this strategy through regional and local institutions.
- # Signatories to this MOU include the DWR, DFG, DPR, SWRCB, BLM, USFS, USF&WS, and NOAA Fisheries.

Biodiversity vs.. Single Species Management

- # Maintenance of biological diversity has been proposed as an alternative management strategy to the single species focus of the federal Endangered Species Act.
- # The central thesis of biodiversity management is management for habitat diversity using a broad-based ecosystem approach aimed at preventing species from becoming endangered.

Methods

- # Acreage of each seral stage (CWHR size and cover classes) of each habitat type within the project area were mapped under Task 6. Mapping output identified not only the acreage of each seral stage but also
 - the distribution of the habitat types and associated seral stages within the project area
 - number of polygons mapped
 - number of seral stages of each habitat type present within the project area

Methods

- # The CWHR database was queried to determine the potential wildlife species occurrence in all seral stages of all habitat types present within the project area.
- # CWHR output from this analyses included the number of species or amphibians, reptiles, birds, and mammals.

Methods

- # The CWHR database was also queried by species to quantify the average habitat suitability value of each habitat type for each species.
- # Habitat suitability values reflect the value (zero to 1.0) of each seral stage of a habitat type for feeding, cover, and reproduction.

Habitat Suitability Information

Suitable Habitats

- RIVERINE
- SALINE EMERGENT WETLAND
- SIERRAN MIXED CONIFER
- URBAN
- VALLEY OAK WOODLAND**
- VALLEY OAK WOODLAND

Species

GREAT BLUE HERON

Ardea herodias

CWHR ID Ave. Suitability Value

B051 0.36

Calculation Method

☒ Arithmetic ☐ Geometric

Calculation Scope

☒ Include all available classes

☐ Include only classes with ratings

Size and Stage Classes

	Rep.	Cov.	Feed.	Suit. Value
1 Seedling Tree				
2S Sapling Tree Sparse				
2P Sapling Tree Open				
2M Sapling Tree Moderate				
2D Sapling Tree Dense				
3S Pole Tree Sparse	L	L		0.22
3P Pole Tree Open				
3M Pole Tree Moderate	L	L		0.22
3D Pole Tree Dense				
4S Small Tree Sparse	L	L	M	0.44
4P Small Tree Open	L	L	M	0.44
4M Small Tree Moderate	M	M	M	0.66
4D Small Tree Dense	M	M	M	0.66
5S Medium/Large Tree Sparse	H	H	M	0.89
5P Medium/Large Tree Open	H	H	M	0.89
5M Medium/Large Tree Moderate	H	H	M	0.89
5D Medium/Large Tree Dense	H	H	M	0.89

Close

Help

Results (Habitat Analyses)

- # Twenty-four CWHR habitat types were identified within the project area (Appendix E).
- # The lacustrine habitat type is the dominant habitat type at 19,851 acres (38.3%) within the project area.
- # Montane Hardwood is also common within the project area totaling 13,867 acres (26.7 %).
- # the twelve least common habitat types occur on less than 1 percent of the project area.

Results (Habitat Analyses)

- # These 12 uncommon habitat types include Douglas fir, Sierra Mixed Conifer, Dryland Grain, Montane Riparian, Deciduous Orchard, Valley Oak Woodland, Evergreen Orchard, Irrigated Hayfield, Ponderosa Pine, Eucalyptus, Pasture, and Vineyard.
- # Three of these uncommon habitat types (Eucalyptus, Montane Riparian, and Valley Oak Woodland) exhibit high species richness values (i.e., >195 species).
- # Further, two of these uncommon habitat types (Montane Riparian, and Valley Oak Woodland) also exhibit high average habitat suitability values (i.e., > 100).

Results (Habitat Analyses)

- # Analyses of habitat mapping data indicate that larger size classes of tree dominated habitat types (>24 inch diameter average dbh) are rare within the project area.
- # Pre-project land management related disturbances (fire/logging) may be responsible for the preponderance of small to medium size classes of tree habitat types.
- # Further, CWHR mapping identify no chaparral stands within the project area in the decadent size class another indication of more recent disturbance.

Results (Habitat Analyses)

- # Data reflect current (baseline) conditions-useful in evaluating potential Resource Action affects on biodiversity.
- # Examples
 - o Non-native species control
 - o Gravel recruitment
- # Need to analyze individual species impacts as well as total species richness impacts of Resource Actions.
- # Resource Actions which remove habitat types of limited distribution within the project area and exhibit high wildlife species richness should be discouraged if wildlife species biodiversity is to be maintained within the project area

Results (Species Analyses)

- # Species which occur in only a limited number of habitat types or have the highest habitat suitability values in a habitat type of limited distribution could be eliminated from the project area under some potential Resource Actions.
- # To allow assessment of these potential impacts, CWHR was modeled by species as well as by habitat (Appendix F).

Results (Species Analyses)

CWHR analyses indicate that 334 wildlife species may occur within the habitat types present within the project area during some time during the year. These total species include;

- 13 species of amphibians

- 22 species of reptiles

- 64 species of mammals

- 235 species of birds

Results (Species Analyses)

- # Appendix A displays the habitat suitability values for each species in each habitat type.
- # These data are useful for identifying those species restricted to limited number of habitat types or whose greatest habitat values are present in uncommon habitat types.
- # An example of this sort of impact analyses would be the water shrew which has the potential to occur in only 6 of the 24 habitat types and exhibits high habitat values only within Montane Riparian habitat which is currently limited to 54 acres within the project area.
- # Other species which are restricted to 3 or fewer habitat types within the project area include;

Results (Species Analyses)

# American bittern	# pied-billed grebe
# Barrow's goldeneye	# redhead
# black-backed woodpecker	# ring-necked duck
# Clark's grebe	# ruddy duck
# common goldeneye	# sora
# common loon	# Thayer's gull
# eared grebe	# Virginia rail
# greater scaup	# western grebe
# least bittern	# willow flycatcher
# marsh wren	# yellow-billed cuckoo
	# yellow-breasted chat

Results (Species Analyses)

- # Of these 21 species, seven species are currently listed under the State or federal Endangered Species acts or are a State or federal Species of Concern.
- # Further, twelve of these species are strongly associated with aquatic habitats (lacustrine or riverine). While both of these aquatic habitats display relatively low species richness in Table 1 (i.e., < 105 species) they provide habitat diversity and habitat for a few species which would be otherwise absent from the project area.

Results (Species Documentation)

- # An additional task requested within the Study Plan development process but not incorporated into any study plan was recording of all wildlife species observed by habitat type during the course of relicensing wildlife studies.
- # Of the 334 species predicted by CWHR to potentially occur within the project area, 190 species (56.8%) were detected during the course of wildlife field studies (Appendix G).
- # This is a surprisingly high percentage considering that many of these species are
 - only present within the project area for a brief period each year
 - are nocturnal
 - difficult to detect without specialized survey techniques

Questions?